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PATENT SPECIFICATION



Convention Date (Germany) : July 15, 1925.

255,437

Application Date (In United Kingdom) : July 2, 1928. No. 16,890 / 28.

Complete not Accepted.

COMPLETE SPECIFICATION.

Improved Bearing for Suspended Hydro-extractors.

We, MASCHINENFABRIK GREVENBROICH, a German company, and WILHELM HECK, of German nationality, both of Bahnhstrasse 35, Grevenbroich (Niederrhein), 5 Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10 The smooth running of suspended hydro-extractors depends to a large extent on the construction of the bearing in which the spindle with the drum suspended on it runs. The bearing must be capable of offering so much resistance that disturbances of equilibrium, more particularly when filling the empty drum, which is itself balanced, are equalised and that the drum adjusts itself quietly.

15 In order to allow the drum to oscillate the ball bearings, which are exclusively used now, are mounted in a housing which rests on rubber buffers or on a spherical surface of the casing. In other cases the 20 spherical surface of the supporting bearing is itself used for this purpose. The resistance in the bearing cannot be calculated where rubber buffers are used and depends on the quality of the rubber, 25 which must be of particularly good quality. In the second and third kind of bearing the resistance corresponds to the friction of the spherical metal surfaces, due to the weight of the drum and 30 spindle and to the weight of the material filling the drum.

35 It is a well-known phenomenon, that by the disturbance of the equilibrium when filling often causes the drum with the spindle to oscillate and does not again become quiet, i.e. does not again settle down to run without oscillations. Frequently, more particularly when the speed of revolution is being increased, the oscillations are so great that the drum scrapes against the casing and may thereby destroy the same. Experience has shown, 40 that in order to ensure smooth running, it is sufficient in such cases if the worker

presses a wooden spatula against the 50 spindle.

The bearing forming the subject of the invention serves the purpose of obtaining smooth running.

A constructional example of a bearing according to the invention is shown in the drawing in longitudinal section.

The hydro-extractor spindle *a* is supported by a supporting bearing *b*, the lower ring *c* of which rests on a supporting ring *d*. On a lateral movement of the spindle taking place, the spherical supporting surfaces slide on one another. On the ring *c* a sleeve *e* is provided, in which the outer ring *f* of a guiding bearing *g* is mounted. The guiding bearing is mounted on the spindle *a* and is pressed by the sleeve *h* against a shoulder on the spindle *a* and is thereby prevented from turning. For closing the guiding bearing *g* and for preventing the grease creeping downwards a collar *i* with labyrinth packing is provided below the said bearing. The ball bearing ring *c* with the sleeve *e* fixed to it does not take part in the rotary motion.

Around the sleeve *e* centrally at equal distances at the periphery buffers *k* are provided, which may for instance be constituted by springs and which are inserted with preliminary stressing. On an oscillation of the spindle *a* occurring the buffers *k* on one side will be unstressed on one side and will be more strongly stressed on the other side, to which the oscillation takes place, so that there will be the tendency of always bringing the spindle *a* back again into the central position. By using buffers *k* of suitable dimensions the forces required for this purpose may be made as great as desired. By this means it is possible to produce a resistance in the hydro-extractor bearing, which is many times greater than the resistance produced in the constructions hitherto known by the rubber buffers or by the friction.

Having now particularly described and

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ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

5. 1. A bearing for suspended hydro-extractors, characterised by the feature that to the supporting bearing of the hydro-extractor is connected a guiding bearing embracing the spindle of the hydro-extractor.
10. 2. A bearing as claimed in Claim 1, characterised by the feature that to the supporting bearing a sleeve is connected and in the latter a guiding bearing is provided, which directly embraces the spindle of the hydro-extractor.
15. 3. A bearing as claimed in Claim 1,
- characterised by the feature that on the sleeve of the guiding bearing radially arranged buffers are provided, which keep the spindle of the hydro-extractor in the central position.
20. 4. A bearing as claimed in Claims 1 and 3, characterised by the feature that the buffers are constituted by springs, which makes it possible to ascertain the resistance forces by calculation.
25. 5. The improved bearing for suspended hydro-extractors, substantially as hereinbefore described and as illustrated in and by the accompanying drawing.

Dated this 1st day of July, 1926.

MARKS & CLERK.

